

THE EFFECT OF OPEN ENDED APPROACHES AND LEARNING MOTIVATION ON MATHEMATICAL LEARNING OUTCOMES IN CLASS V

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ABSTRACT

This study aims to reveal the effect of the Open Ended Approach and motivation to learn on the mathematics learning outcomes of fifth grade students in Elementary School. The type of research used is Quasi Experiment with the design of Randomized Control Group Only Design. The population in this study are all elementary school students who have used the 2013 curriculum in Cluster VI Palembang District registered in the first semester of the 2018/2019 school year with a sample of VB SDN 27 Tapian Kandis as an experimental class and VA SDN 27 Tapian Kandis as a class control. Sampling is done by simple random sampling technique. Research data was collected through pretest and posttest student learning outcomes. The hypothesis is proposed using the t test formula. The results showed that there was an effect of the Open Ended Approach and learning motivation on the mathematics learning outcomes of fifth grade elementary school students with the average student learning outcomes in the experimental class with 54.83 and posttest pretest 83.17 and the average learning outcomes for class students the control is 48.43 and posttest 76.05.

Keywords: Open Ended Approach, Learning Motivation, Mathematics Learning Outcomes

INTRODUCTION

Mathematics is a subject that is studied starting from the basic level of education to the level of higher education. The purpose of learning mathematics as stated in the Minister of National Education Regulation No. 22 of 2006 concerning the standard of content (Depdiknas, 2006; Hermon and Dalim, 2006) Mentioning the purpose of learning mathematics is so students have the ability: 1) Understand mathematical

concepts, explain the interrelationships between concepts and apply concepts or algorithms, 2) Using reasoning on patterns and traits, making mathematical manipulations in making generalizations, compiling evidence, or explaining mathematical ideas and statements, 3) Solving problems that include the ability to understand problems, designing mathematical models, completing models and interpreting solutions obtained, 4) Communicate ideas with symbols, tables, diagrams, or other media to clarify the situation or problem, and 5) Have an attitude of appreciating the usefulness of mathematics in life, which has curiosity, attention, and interest in learning mathematics, as well as resilience and confidence in problem solving.

According to Minister of Education and Culture No. 21 of 2016 concerning content standards explaining the purpose of learning mathematics is (1) using the ability to think and reason in problem solving, (2) communicating ideas effectively, (3) having attitudes and behaviors that are in accordance with mathematical values and learning, such as obedience principle, consistent, upholding density, respecting differences of opinion, thorough, tough, creative, and open. Based on the objectives of mathematics learning above, it can be concluded that the purpose of mathematics learning in general is focused on developing thinking and reasoning abilities in solving problems. achieving learning objectives can be seen from the increase in student learning outcomes.

According to Aunurrahman (2012); Hermon (2015), learning outcomes are behavioral changes characterized by changes in thinking and reasoning abilities in solving problems. Based on expert opinion above, it can be concluded that learning outcomes are changes in a student's behavior in learning and after learning where there is a change in the ability to think, reason, and be able to solve problems.

In the process of implementing mathematics learning, the problem often faced by students is solving problems with formula formulas and the existence of general rules and mathematical reasoning (Hermon and Dalim, 2005). This is stated in the student handbook where in solving the students sometimes do not think critically in solving these problems and are guided by the formula in the book. Mathematics learning is one of learning which becomes a means of logical thinking, analytical, systematic, critical and creative and able to utilize the information received.

The current state of mathematics learning outcomes in Indonesia is still low, this situation is evenly distributed at all levels of education starting from elementary school, junior high school, high school and also in public universities and in the private sector. This is in line with the ranking results of the Program for International Student Assessment (PISA) (2015) that Indonesia's ranking for Mathematics subjects ranked 63rd out of 70 countries, whereas in the 2012 PISA, Mathematics rankings were 64 from 65 countries and the average score from the whole from 2012 to 2015 increased from 375 to 386. This is in line with the results of the measurement of Trends for the International Mathematics and Science Study (TIMSS) 2011, showing that Indonesian mathematics learning abilities are also still relatively low, which only scores 386 of the many countries, which are far below the international standard of 500. For this reason, mathematics subjects need to get maximum attention from several other subjects. The success of learning mathematics in various countries also experiences problems in learning, this is in accordance with the study of Prediger (2018) that it is inadequate for students to write mathematical sentences and solve questions related to problem solving, students are less able to solve verbal problems.

METHOD

The type of research is Quasy Experiment with the design used is Randomized Control Group Only Design. The population in this study are all elementary school students who have used the 2013 curriculum in Cluster VI Palembang District registered in the first semester of the 2018/2019 school year with a sample of VB SDN 27 Tapian Kandis as an experimental class and VA SDN 27 Tapian Kandis as a class control. Sampling is done by simple random sampling technique. Research data was collected through pretest and posttest student learning outcomes. The hypothesis is proposed using the t test formula.

RESULTS AND DISCUSSION

The results of this study will describe the description of the data "The Effect of Open Ended Approach and Learning Motivation on Mathematics Learning Outcomes in Class V. Data on learning outcomes from two sample classes were obtained before and

after learning using the Open Ended Approach with learning motivation and conventional learning models. , there were 24 students who took the learning outcomes test, and in the control class there were 24 student. The test results of the experimental class student learning were higher than the control class on the average student learning outcomes test. The results of the average experimental class students pretest were 54.83 and posttest was 83.17 while the average learning outcomes for pretest control class students were 48.43 and posttest was 76.05 The maximum score of student learning outcomes tests in the experimental class was pretest 80 and posttest 98 while the maximum score of learning outcomes was students in the control class were pretest 64 and posttest 86. The minimum score of the learning outcomes test in the experimental class was the pretest 30 and posttest 60 while the minimum score of the student learning outcomes in the control class was pretest 32 and posttest 68.

The requirements analysis test was conducted to see conclusions about the data obtained from the test of learning outcomes of class V students in both sample classes. Before conducting a hypothesis test, the data normality test is done manually first. Testing the first hypothesis in this study uses the t-test. From the distribution list t with a significance level of 0.05. Seen in table t with dk $(n_1 - 1) + (n_2 - 1) = (24 + 24 - 2) = 46$. So what is followed in the table with a real level of 0.05 is the price of t table 2.01954. Thus $t_{count} > t_{table}$, which is $22.99 > 2.01954$, then H_0 is rejected and H_1 is accepted. there is the influence of the Open Ended Approach on student learning outcomes. Based on the above calculations it can be concluded that there is an influence of the Open Ended Approach and motivation of students in the experimental group compared to students in the control group who use conventional learning models.

This study has revealed that the Open Ended Approach and motivation to learn have a large positive influence on student learning outcomes. The application of the Open Ended Approach and learning motivation in learning in real terms researchers see student learning motivation in learning can be generated and student learning outcomes look good. The fact that the Open Ended Approach is more successful in helping students begins with presenting open problems that allow students to develop their mindset freely according to their interests and abilities, and students gain knowledge, know, process and solve problems in various ways according to each one so that

students feel valued with answers that he thinks are right then the teacher also knows the cognitive differences of students.

According to research by Mok (2008) the problems found were that teachers were less ideal in fostering student involvement in higher-order thinking, teachers did not provide truly problematic task assignments where the questions were not able to challenge students to be motivated to do it, teachers gave students less opportunities for communication and mathematical reasoning, students lack the opportunity to express their ideas and justify their answers, then teachers are less able to condition the class so that the focus on student mathematics learning is lacking.

According to Permadi (2016) the problem in mathematics learning is because the use of traditional teaching methods is considered to be one of the important factors that cause the formation of misunderstandings, so students have the perception that learning is a process of transferring knowledge from teacher to student resulting in misunderstandings originating from false beliefs and individual experiences previously it caused a wrong understanding of new concepts. Mehmetlioglu (2014) in his study stated that misconceptions that occur in students due to many reasons are only using a teacher-centered approach, not establishing connectivity between subjects and concepts, not encouraging students to participate in lessons, not paying attention to student knowledge and teaching concepts to students in the wrong way.

From some of the opinions of the researchers above, it can be concluded that there are several factors that cause low mathematics learning outcomes, namely the existence of applied learning methods still using a conventional approach, so that in learning students are still given notes and explanations, questions and answers and so many questions. to students so that students are less active and are required to memorize learning or mathematical formula formulas that have been learned.

CONCLUSION

There is an influence of the Open Ended Approach and learning motivation on the mathematical results of fifth grade students in Elementary School. Based on the conclusions above, some suggestions can be made to improve learning outcomes, including: (1) for teachers to be able to use the Open Ended Approach and motivation to

learn in the fifth grade mathematics learning process in Elementary Schools, because the Open Ended Approach and motivation to learn can improve outcomes student learning, (2) for principals as information in fostering teachers in making positive contributions to improve the learning process and (3) for other interested researchers who are expected to be able to conduct further research by being able to anticipate the obstacles that occur.

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